

connect to the ATM switch 30-1 via the transports 135₁-1 and 135₁-2, respectively, the R-DSLAMs 8₂-1 and 8₂-2 connect to the ATM switch 30-2 via the transports 135₂-1 and 135₂-2, respectively, ~~the R-DSLAMs 8₃-1 and 8₃-2 connect to the ATM switch 30-3 via the transports 135₃-1 and 135₃-2, respectively~~ and the R-DSLAMs 8₄-1 and 8₄-2 connect to the ATM switch 30-4 via the transports 135₄-1 and 135₄-2, respectively, and the R-DSLAMs 8₅-1 and 8₅-2 connect to the ATM switch 30-5 via the transports 135₅-1 and 135₅-2, respectively.

[0046] The R-DSLAMs 8, including R-DSLAMs 8₁-1 and 8₁-2, 8₂-1 and 8₂-2, ~~8₃-1 and 8₃-2 and 8₄-1 and 8₄-2, and 8₅-1 and 8₅-2~~ connect to customer premises 4. The customer premises 4-1, ..., 4-CP connected to R-DSLAMs 8₅-1 and the customer premises 4'-1, ..., 4'-CP connected to R-DSLAM ~~8₄-1~~ 8₄-1 which are shown as typical. Each of the R-DSLAMs 8 of FIG. 4, like R-DSLAMs 8₄-1 and 8₅-1, similarly connects to customer premises 4.

[0054] The R-DSLAM 8 functions to provide broadband services to the customers, at the customer premises 4 of FIG. 5, through the alternate backhaul transport 7. The R-DSLAM 8 in FIG. 5 is functionally like a conventional DSLAM 8' located in a conventional ILEC central office 2 of a telephone company. The R-DSLAM 8 of FIG. 5 facilitates the transmission of broadband traffic between broadband modems, located at customer premises 4, and the central office 2 and/or to the network 14.

[0059] FIG. 6 depicts further details of the communications system 1 of FIG. 5 with the R-DSLAMs 8 connected to access points 55 at SAIs 24 including points 55-1, 55-2 and 55-3 at SAIs 24-1, 24-2 and 24-3, respectively, and to other subloop access points 55 remote from the SAIs 24 and closer to the customers 4 including points 55-4 and 55-5 closer to customers in subloops 19-1 and 19-2, respectively. In some instances, the access points and/or the R-DSLAMs are located at the customer premises 4 as shown, by way of example, for access points 55-6 at multiple unit (MultiU) CPs 4'. The R-DSLAMs 8 are interconnected by wireless transports 26 to form a local network 28. Additionally, the R-DSLAMs 8 connect through a backhaul network 20 formed of switches 30, including switches 30-1, 30-2, ..., 30-5,

interconnected by wireless transports 27. The backhaul network 20 connects to the central office 2, remote office 2' and to the networks 8 & 14.

[0066] The alternate connection 6 of FIG. 5 and FIG. 6, including R-DSLAMs 8 and alternate backhaul connection 7, is managed by the element manager 23 of FIG. 6. The element manager 23 maintains supervisory and control information about the, ~~backhaul~~ backhaul connection 7 including the wireless network 20 and the wireless network 28. In particular, element manager 23 maintains a database of switches 30, transports 27 and other equipment and facilities that are available and their operation status.

[0069] The master unit 51 includes a processor 31 which processes algorithms for operating the R-DSLAM. The processor 31 connects to an SAR 32 which functions to assemble and disassemble information into an ATM format. The SAR 32 interconnects with the ATM switch fabric 33 which functions to switch packets to customers, connected over the trunk interfaces 34 and the backhaul connections connected over the ATM interface 37. Local management of the master unit 51 is carried out by the local manager 30 connected through the port unit ~~52~~ 35 (RS-232 format). The local manager ~~54~~ 30 also interconnects to the processor 31, the SAR 32 and the ATM switch fabric 33 via port unit 36 (ETHERNET format).